

CLAIMS:

5 1. A massaging apparatus comprising:  
at least one guide rail affixed to a support structure, wherein the guide rail includes a generally v-shaped cross-section for receipt of at least one guide wheel;  
the guide wheels including a generally diamond shaped cross-section adapted for rolling  
within the guide rails and being rotatably attached to a carriage assembly, wherein the carriage  
assembly is translationally coupled to the guide rails by the guide wheels; and  
the carriage assembly including a massage member and means for driving the guide  
wheels, wherein the carriage assembly translates axially along the guide rails.

10 2. The massage apparatus of claim 1, wherein an annular groove is formed along the vertex  
of the guide wheel to accommodate an o-ring.

15 3. The massage apparatus of claim 1, wherein the guide wheel is preferably double molded  
comprising a wheel interior molded from a substantially hardened plastic, and an exterior molded  
from a substantially malleable plastic.

20 4. The massage apparatus of claim 3, wherein the wheel interior is molded from nylon, and  
the wheel exterior is molded from urethane.

25 5. A massaging apparatus comprising:  
at least one guid rail affixed to a support structure, the guide rail including a first raceway  
and a second opposing raceway;  
a carriage assembly including at least one rotatably attached guide wheel and at least one  
biasing member acting in opposition to the guide wheel, the guide wheel being adapted to travel

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5 within the first raceway, thereby coupling the carriage assembly to the guide rail, and the biasing member being adapted to bear against the second raceway, wherein force applied by the biasing member centers the guide wheel within the first raceway;

the carriage assembly further including a massage member and means for driving the guide wheels, wherein the carriage assembly translates axially along the guide rails.

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6. The massage apparatus of claim 5, wherein the first raceway comprises a generally V-shaped cross section.

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7. The massage apparatus of claim 5, wherein the second raceway is spaced apart from the first raceway, parallel to the plane of movement of the carriage.

8. The massage apparatus of claim 5, wherein the guide wheel comprises a generally diamond shape cross-section for fitting within the first raceway.

9. The massage apparatus of claim 5, wherein the guide wheel is preferably double molded comprising a wheel interior molded from a substantially hardened plastic, and an exterior molded from a substantially malleable plastic.

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10. The massage apparatus of claim 9, wherein the wheel is preferably double molded comprising an interior molded from nylon, and an exterior molded from urethane.

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11. The massage apparatus of claim 5, wherein the biasing member is a biasing wheel comprising a first large diameter section and a second smaller diameter section, the second smaller diameter section extending concentrically from the first large diameter section.

5 12. The massage apparatus of claim 11, wherein an o-ring is fitted within an annular groove formed along the circumferential surface of the second section.

10 13. The massage apparatus of claim 11, wherein the second diameter section is overmolded with a rubber or rubber-like material.

15 14. The massage apparatus of claim 5, wherein the biasing member is spring loaded and self adjusting in such manner as to maintain guide wheel within the first raceway, alleviating any slack caused by wear of the guide wheel.

20 15. A massaging apparatus comprising:  
at least one guide rail affixed to a support structure, wherein the guide rail is adapted for the receipt of at least one guide wheel;  
a carriage assembly including at least one rotatably attached guide wheel and a means for driving the guide wheel, wherein the guide wheel and driving means translationally couple the carriage assembly to the guide rail;

25 *Transverse To what?* the carriage assembly further including a transverse shaft rotationally coupled to the carriage assembly and a means for causing the transverse shaft to rotate about its longitudinal axis;

30 *ante?* the longitudinal shaft including at least one massaging member, wherein the massaging member is obliquely and eccentrically coupled to the transverse shaft and is capable of freewheeling about the shaft;

? the massaging member including a means for coupling with a retainer; and

35 the retainer being fixed to the carriage assembly and coupled to the massaging member, so that upon rotation of the transverse shaft, the retainer prevents the massaging member from

5 rotating, wherein the obliquely and eccentrically mounted massaging member is constrained to move with a sideways oscillating motion.

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16. The massage apparatus of claim 15, wherein the massaging member includes a lobe and a boss member, and wherein the boss member is rotatably fixed to the transverse shaft.

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17. The massage apparatus of claim 16, wherein the lobe is rotably coupled to the boss member about an oblique surface of the boss member, and wherein the lobe is adapted to freewheel about the boss member.

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18. The massage apparatus of claim 16, wherein the lobe is partially discoid.

19. The massage apparatus of claim 15, wherein the retainer comprises a U-shaped bar defining a slot.

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20. The massage apparatus of claim 19, wherein the means for coupling the massaging member with the retainer is a bar shaped element extending from the massaging member for engaging the slot to limit the massaging member to sideways movement.

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21. The massage apparatus of claim 15, wherein the means for coupling the massaging member with the retainer is a peg located along a foot portion of the massaging member.

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22. The massage apparatus of claim 21, wherein the retainer comprises a tension spring coupled between the housing and the peg for limiting the massaging member to sideways movement.

5 23. The massage apparatus of claim 15 wherein the transverse shaft includes a second massaging member, and wherein the second massaging member is obliquely and eccentrically coupled to the shaft and is capable of freewheeling about the shaft.

10 24. The massage apparatus of claim 23 wherein the second massaging member includes a means for coupling the second massaging member with a second retainer, and wherein the second retainer is fixed to the carriage assembly and coupled to the second massaging member, so that upon rotation of the transverse shaft, the retainer prevents continuous rotation of the second massaging member, thereby constraining the second massaging member to move in a sideways oscillating motion.

15 25. The massage apparatus of claim 24, wherein the transverse shaft is divided into a first and second shaft portion interconnected through a half-turn clutch, and wherein the first massaging member being displaced along the first shaft portion and the second massaging member being displaced along the second shaft portion, and wherein the clutch enables the first shaft portion 20 to rotate relative to the second shaft portion for selectively switching the motion of the pair of massaging members into a kneading motion where massaging members move opposite to each other and a non-kneading motion where the messaging members move with each other.

25 30 26. The massage apparatus of claim 25, wherein additional massaging members comprising mini-rollers are mounted at various end portions of the shaft, enabling the user to enjoy, in addition to the kneading and finger pressure-like massage by the pair of massage members, a rolling massage by the multiplicity of mini-rollers if the affected part is moved closer to each end 35 of the rotary shaft.

27. A hand-carriable massaging apparatus comprising:  
5       a housing having an opening on a front side thereof;  
the housing further including a transverse shaft rotationally coupled to the housing and  
a means for causing the transverse shaft to rotate about its longitudinal axis;  
10      the transverse shaft including at least one massaging member displaced along the shaft  
at a location corresponding to the opening, and wherein the massaging member is obliquely and  
eccentrically coupled to the transverse shaft and is capable of freewheeling about the shaft;  
15      the massaging member including a means for coupling the massaging member with a  
retainer;  
20      the retainer being fixed to the housing and coupled to the massaging member, so that upon  
rotation of the transverse shaft, the retainer prevents continuous rotation of the massaging  
member, and wherein the obliquely and eccentrically mounted massaging member is constrained  
to move with a sideways oscillating motion.

25     28. The massage apparatus of 27 wherein the massaging member is partially discoid  
comprising a lobe.

30     29. The massage apparatus of 27 wherein the retainer comprises a U-shaped bar defining a  
slot.

35     30. The massage apparatus of claim 29, wherein the means for coupling the massaging  
member with the retainer is a bar shaped element extending from the massaging member for  
engaging the slot to limit the massaging member to sideways movement.

5 31. The massage apparatus of claim 27, wherein the means for coupling the massaging member with the retainer is a peg located along a foot portion of the massaging member.

10 32. The massage apparatus of claim 31, wherein the retainer comprises a tension spring coupled between the housing and the peg for limiting the massaging member to sideways movement.

15 33. The massage apparatus of claim 27 wherein the transverse shaft includes a second massaging member, and wherein the second massaging member is obliquely and eccentrically coupled to the shaft and is capable of freewheeling about the shaft.

20 34. The massage apparatus of claim 33 wherein the second massaging member includes a means for coupling the second massaging member with a second retainer, and wherein the second retainer is fixed to the carriage assembly and coupled to the second massaging member, so that upon rotation of the transverse shaft, the retainer prevents continuous rotation of the second massaging member, thereby constraining the second massaging member to move in a sideways oscillating motion.

25 35. The massage apparatus of claim 34, wherein the transverse shaft is divided into a first and second shaft portion interconnected through a half-turn clutch, and wherein the first massaging member being displaced along the first shaft portion and the second massaging member being displaced along the second shaft portion, and wherein the clutch enables the first shaft portion to rotate relative to the second shaft portion for selectively switching the motion of the pair of massaging members into a kneading motion where massaging members move opposite to each 30 other and a non-kneading motion where the messaging members move with each other.

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36. The massage apparatus of claim 35, wherein additional massaging members comprising mini-rollers are mounted at various end portions of the shaft, enabling the user to enjoy, in addition to the kneading and finger pressure-like massage by the pair of massage members, a rolling massage by the multiplicity of mini-rollers if the affected part is moved closer to each end  
10 of the rotary shaft.

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37. A chair-type massaging apparatus comprising a massaging device disposed within a portion of the apparatus, the massaging device including:

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at least one guide rail affixed to a support structure, the guide rail including a first raceway having a generally V-shaped cross section and a second opposing raceway spaced apart from the first raceway, parallel to the plane of movement of a carriage assembly;

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the carriage assembly including at least one rotatably attached guide wheel and at least one biasing member acting in opposition to the guide wheel, the guide wheel being adapted to travel within the first raceway, thereby coupling the carriage assembly to the guide rail, and the biasing member being adapted to bear against the second raceway, wherein force applied by the biasing member centers the guide wheel within the first raceway;

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the carriage assembly further including a massage member and means for driving the guide wheels, wherein the carriage assembly translates axially along the guide rails.

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38. The massage apparatus of claim 37, wherein the bearing member is a biasing wheel comprising a first large diameter section and a second smaller diameter section, the second smaller diameter section extending concentrically from the first large diameter section.

39. The massage apparatus of claim 37, wherein the bearing member is spring loaded in a direction away from the wheel, and wherein the bearing member is self adjusting and biased away from the wheel to maintain the carriage within the rail, alleviating any slack caused by wear to the wheel and biasing member.

40. A massaging apparatus for use in a chair, the apparatus comprising:

a frame:

a transverse shaft rotationally coupled to a portion of the frame and a means for causing the transverse shaft to rotate about its longitudinal axis;

the transverse shaft including at least one massaging member, wherein the massaging member is obliquely and eccentrically coupled to the transverse shaft and is capable of freewheeling about the shaft;

the massaging member including a means for coupling with a retainer; and

the retainer being fixed to a portion of the apparatus and coupled to the massaging member, so that upon rotation of the transverse shaft, the retainer prevents the massaging member from rotating, wherein the obliquely and eccentrically mounted massaging member is constrained to move with a sideways oscillating motion.

41. The massage apparatus of claim 40, wherein the massaging member comprises a partially discoid lobe.

42. The massage apparatus of claim 40, wherein the retainer comprises a U-shaped bar defining a slot.

43. The massage apparatus of claim 42, wherein the means for coupling the massaging member with the retainer is a bar shaped element extending from the massaging member for engaging the slot to limit the massaging member to sidewards movement.

44. The massage apparatus of claim 40, wherein the means for coupling the massaging member with the retainer is a peg located along a foot portion of the massaging member.

45. The massage apparatus of claim 44, wherein the retainer comprises a tension spring coupled between the frame and the peg for limiting the massaging member to sidewards movement.

46. A massaging apparatus comprising:  
at least one guide rail affixed to a support structure, wherein the guide rail includes a generally C-shaped cross-section for receipt of at least one guide wheel;  
the guide wheels being rotatably attached to a carriage assembly, wherein the carriage assembly is translationally coupled to the guide rails by the guide wheels; and  
the carriage assembly including at least one partially discoid massaging member and means for driving the guide wheels, wherein the carriage assembly translates axially along the guide rails.

47. The massage apparatus of claim 46, wherein the carriage assembly further includes a retainer coupled to the massaging member for constraining the massaging member to a sideward oscillating motion.

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48. A massaging apparatus comprising:

at least one guide rail affixed to a support structure, the guide rail including a raceway having a generally C-shaped cross section and a bearing surface;  
a carriage assembly including at least one rotatably attached guide wheel and at least one biasing member acting in opposition to the guide wheel, the guide wheel being adapted to travel within the raceway, thereby coupling the carriage assembly to the guide rail, and the biasing member being adapted to bear against the bearing surface, wherein force applied by the biasing member centers the guide wheel within the raceway;

the carriage assembly further including a massage member and means for driving the guide wheels, wherein the carriage assembly translates axially along the guide rails.

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49. A chair-type massaging apparatus comprising a massaging device disposed within a portion of the apparatus, the massaging device including:

at least one guide rail affixed to a support structure, the guide rail including at least a first raceway;  
a carriage assembly including at least one rotatably attached guide wheel, the guide wheel being adapted to travel within the first raceway, thereby coupling the carriage assembly to the guide rail;

the carriage assembly further including a massage member and means for driving the guide wheels, wherein the carriage assembly translates axially along the guide rails;

wherein the support structure includes at least one adjustable fastener for attaching the support structure to the chair.

50. The massage device of claim 49, wherein the adjustable fastener is a sliding body for engaging an aperture within the chair-type massaging apparatus.

51. The massage device of claim 50, wherein the support structure further includes at least one rail having a generally V-shaped cross section.

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52. The massage device of claim 51, wherein the sliding body comprises a generally V-shaped profile for mating the rail.

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53. A method of installing a massaging device into a chair-type massaging apparatus, the method comprising:

providing a massaging device comprising:

15 a support structure; and

at least one adjustable fastener coupled to the support structure;

engaging the fastener with an aperture in the massage apparatus;

securing the massaging device within the massage apparatus by fastening the fastener to a given position; and

removing the massaging device from the massaging apparatus by un-fastening the fastener and a disengaging the fastener from the aperture.

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25 54. The method of claim 53, wherein the support structure further includes at least one rail having a generally V-shaped cross section.

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55. The method of claim 54, wherein the adjustable fastener is sliding body having a generally V-shaped profile for mating the rail.

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